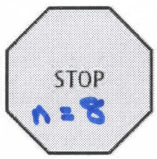
Name ANSWER KEY Period_____

Geometry Unit 8 Worksheet #2

For #1-6, find the sum of the interior angles, one interior angle, sum of the exterior angles and one exterior angle in the regular polygon.

1.



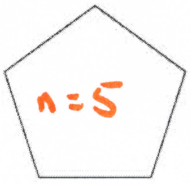
sum of int ∠ 1080°

one int ∠ 135°

sum of ext ∠ 360°

one ext ∠ 45°

2.



sum of int ∠ 540°

one int ∠ 108°

sum of ext ∠ 360°

one ext ∠ 72°

3.

sum of int ∠ 900°

one int ∠ 128.6°

sum of ext ∠ 360°

one ext ∠ 51.4°

4. regular 15-gon

sum of int ∠ 2340°

one int ∠ 156°

sum of ext ∠ 360°

one ext ∠ 24°

5. regular 11-gon

sum of int ∠ 1620°

one int ∠ 147.3°

sum of ext ∠ 360°

one ext ∠ 32.7°

6. regular 13-gon

sum of int ∠ 1980°

one int ∠ 152.3°

sum of ext ∠ 360°

one ext ∠ 27.7°

For #7-12, The measure of an exterior angle of a regular polygon is given. Find the number of sides.

7. 12°

$\frac{360^\circ}{12^\circ} = 30$ SIDES

8. 6°

$\frac{360^\circ}{6^\circ} = 60$ SIDES

9. 45°

$\frac{360^\circ}{45^\circ} = 8$ SIDES

10. 40°

$\frac{360^\circ}{40^\circ} = 9$ SIDES

11. 24°

$\frac{360^\circ}{24^\circ} = 15$ SIDES

12. 18°

$\frac{360^\circ}{18^\circ} = 20$ SIDES

For #13-18, the sum of the measures of the interior angles of a polygon is given. Find the number of sides.

13. 180°

$\frac{(n-2)\cdot 180}{180} = \frac{180}{180}$

$(n-2) = 1$

$n = 3$ SIDES

14. 540°

$\frac{(n-2)\cdot 180}{180} = \frac{540}{180}$

$n-2 = 3$

$n = 5$ SIDES

15. 900°

$\frac{(n-2)\cdot 180}{180} = \frac{900}{180}$

$n-2 = 5$

$n = 7$ SIDES

16. 2520°

$\frac{(n-2)\cdot 180}{180} = \frac{2520}{180}$

$n-2 = 14$

$n = 16$ SIDES

17. 3960°

$\frac{(n-2)\cdot 180}{180} = \frac{3960}{180}$

$n-2 = 22$

$n = 24$ SIDES

18. 5940°

$\frac{(n-2)\cdot 180}{180} = \frac{5940}{180}$

$n-2 = 33$

$n = 35$ SIDES